

IN THE CLAIMS

Please amend the claims to read as follows:

1. (Currently Amended) A method for building a directed set to allow a user of a computer system to find a context in which to answer a question, the method comprising:
identifying a plurality of concepts to form a directed set, wherein only one concept is a maximal element;

~~establishing a directed link-links between at least a first concept and a second concept~~
~~pairs of concepts in the directed set, the directed link-links defining an "is a" relationship~~
~~relationships between the first concept and the second concept; concepts in the pairs of~~
~~concepts, so that each concept is either a source or a sink of at least one directed link;~~

establishing chains in the directed set from the maximal element to each concept,
where for each pair of concepts in each chain, one of the pair of concepts is a lineal ancestor
of the other of the pair of concepts;

selecting one or more chains in the directed set as a basis; and

measuring how concretely each concept is represented in each chain in the basis.

2. (Original) A method according to claim 1 further comprising creating a
state vector for each concept in the directed set, wherein each state vector includes as its
components measures of how concretely the concept is represented in each chain in the basis.

3. (Original) A method according to claim 2 wherein creating a state vector
for each concept in the directed set includes measuring a distance between the state vectors
for each pair of concepts.

4. (Original) A method according to claim 1 further comprising introducing
a new concept into the directed set.

5. (Original) A method according to claim 4 wherein introducing a new
concept includes:

adding a new chain from the maximal element to the new concept; and
measuring new distances from the new concept to each chain in the basis.

6. (Original) A method according to claim 1 further comprising:
discarding the chains in the basis; and

re-selecting one or more chains in the directed set as a new basis.

7. (Previously Presented) A method according to claim 1 further comprising:

receiving new information about a first concept in the directed set; and
updating the directed links for the first concept.

8. (Currently Amended) A method according to claim 7 wherein updating the directed links includes at least one of:

- a) removing an existing chain from the maximal element to the first concept; and
- b) establishing a new chain from the maximal element to the first ~~concept~~
concept, where for each pair of concepts in the new chain, one of the pair of concepts is a
lineal ancestor of the other of the pair of concepts.

9. (Original) A method according to claim 1 wherein identifying a plurality of concepts includes:

listening to a content stream; and
parsing the concepts from the content stream.

10. (Currently Amended) A method according to claim 1 wherein ~~establishing a~~
~~directed link between at least a first concept and a second concept~~ establishing chains in the
directed set from the maximal element to each concept includes:

listening to a content stream;
identifying a relationship between ~~the a~~ first concept and ~~the a~~ second concept from
the content stream; and
establishing a chain from the maximal element to the first concept through the second
concept to model the relationship between the first and second concepts.

11. (Currently Amended) A computer-readable medium containing a program to
build a directed set to allow a user of a computer system to find a context in which to answer
a question, the program comprising:

identification software to identify a plurality of concepts to form a directed set,
wherein only one concept is a maximal element;

chain-establishment software to establish chains in the directed set from the maximal element to each concept, where for each pair of concepts in each chain, one of the pair of concepts is a lineal ancestor of the other of the pair of concepts;

chain-selection software to select one or more chains ~~in~~ in the directed set as a basis;

and

measurement software to measure how concretely each concept is represented in each chain in the basis.

12. (Currently Amended) A storage medium for storing a lexicon as a directed set for use by an application program to establish a context for a query, the storage medium comprising:

a data structure stored in the storage medium, the data structure including the lexicon and including:

a plurality of concepts stored in the storage medium, wherein only one concept is a maximal element; and

at least one chain extending from the maximal element to each concept, wherein the chain includes an ordered subset of the concepts, beginning with the maximal element and ending with the concept, where for each pair of concepts in each chain, one of the pair of concepts is a lineal ancestor of the other of the pair of concepts.

13. (Original) A storage medium according to claim 12 further comprising a data structure storing a plurality of distances between pairs of concepts.

14. (Original) A storage medium according to claim 12 further comprising a data structure identifying at least one chain as a chain in a basis for the directed set.

15. (Currently Amended) An apparatus on a computer system to build a directed set to allow a user of the computer system to find a context in which to answer a question, the apparatus comprising:

a data structure according to claim 12 to store the directed set;

an identification unit to identify the plurality of concepts in the directed set, wherein

the directed set includes ~~a~~ only one maximal element;

a chain unit to establish chains in the directed set from the maximal element to each concept, where for each pair of concepts in each chain, one of the pair of concepts is a lineal ancestor of the other of the pair of concepts;

a basis unit to select one or more chains in the directed set as a basis; and

a measurement unit to measure how concretely each concept is represented in each chain in the basis.

16. (Currently Amended) An apparatus on a computer system to build a directed set to allow a user of the computer system to determine what questions can be answered using a given context, the apparatus comprising:

a data structure according to claim 12 to store the directed set;

an identification unit to identify the plurality of concepts in the directed set, wherein the directed set includes ~~a~~only one maximal element;

a chain unit to establish chains in the directed set from the maximal element to each concept, where for each pair of concepts in each chain, one of the pair of concepts is a lineal ancestor of the other of the pair of concepts;

a basis unit to select one or more chains in the directed set as a basis; and

a measurement unit to measure how concretely each concept is represented in each chain in the basis.

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Currently Amended) An apparatus on a computer system to enable a user of the computer system to find a context in which to answer a question, the apparatus comprising:

a directed set stored in the computer system, the directed set including a plurality of first concepts, ~~a~~only one maximal element, and at least one basis chain extending from the maximal element to one of the first concepts, where for each pair of first concepts in each basis chain, one of the pair of first concepts is a lineal ancestor of the other of the pair of first concepts;

an input for receiving a content stream;
a listening mechanism listening to the content stream and parsing the content stream into second concepts; and
a measurement mechanism measuring distances between pairs of the second concepts according to the plurality of first concepts and the basis chains of the directed set.

21. (Original) An apparatus according to claim 20, wherein:
the apparatus further comprises a network connection; and
the input for receiving the content stream is coupled to the network connection.

22. (Original) An apparatus according to claim 20, wherein the measurement mechanism includes:
a state vector constructor converting each second concept into a state vector in Euclidean k-space; and
measuring means for measuring the distance between state vectors corresponding to the second concepts according to the plurality of first concepts and the basis chains of the directed set.

23. (Currently Amended) A method according to claim 1, wherein establishing a directed ~~link-links~~ includes:
establishing a first directed link from ~~the a~~ second concept to ~~the a~~ first concept; and
establishing a second directed link from a third concept to the first concept.

24. (Previously Presented) An apparatus according to claim 20, the directed set further including a directed link to a third concept from a fourth concept, the directed link establishing an "is a" relationship between the third concept and the fourth concept.

25. (Previously Presented) An apparatus according to claim 24, the directed set further including a second directed link to the third concept from a fifth concept, the directed link establishing an "is a" relationship between the third concept and the fifth concept.

26. (New) A method according to claim 3, wherein measuring a distance between the state vectors for each pair of concepts includes measuring a Euclidean distance between the state vectors for each pair of concepts.

27. (New) An apparatus according to claim 22, wherein the measuring means includes Euclidean measuring means for measuring a Euclidean distance between state vectors corresponding to the second concepts according to the plurality of first concepts and the basis chains of the directed set.

28. (New) A method according to claim 6, wherein:
discarding the chains in the basis includes discarding the chains in the basis independent of any document; and
re-selecting one or more chains in the directed set as a new basis includes re-selecting one or more chains in the directed set as the new basis independent of any document.